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BOOK REVIEW

Rüdiger Kiesel, Matthias Scherer, and Rudi Zagst (eds.): Alternative investments and strategies

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Alternative Investments and Strategies, edited by Rüdiger Kiesel, Matthias Scherer, and Rudi Zagst, combines academic research and practical expertise on alternative asset classes and strategies in 391 pages. A total of 15 articles, designed as individual chapters, provide an innovative and comprehensive overview of alternative asset classes and portfolio strategies. Each chapter features a concise abstract and extensive reference list for readers interested in delving even deeper into the world of alternative asset classes and corresponding investment strategies. In general, relevance and rigor are well balanced and the book is written in an appealing manner.

The 15 chapters of the book are divided into two parts. Part I basically includes the practitioner viewpoint on new asset classes (e.g., power forward contracts, forward freight agreements, and investments in photovoltaic facilities) as well as academic research on several modeling approaches. Chapters 1 to 3 provide an overview of three asset classes—socially responsible investing (SRI), listed private equity (LPE), and alternative real assets (e.g., infrastructure, shipping, renewable energy projects)—in a portfolio context. To capture the characteristics of the first two asset classes, a Markov switching model is implemented. Chapter 4 investigates the relationship between freight markets, freight derivatives, and macroeconomic variables by implementing a vector autoregression and vector error correction model. The author of Chap. 5 investigates the implied power forward dynamics where the volatility of the power forward is simply the average of the fixed-maturity forward volatility. Pricing certificates under issuer risk is the principal topic of Chap. 6. To account for default risk in the pricing, however, a closed-form expression for index, basket, and bonus certificates in a Black–Scholes setting is derived. Chapter 7 presents a scenario-based

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asset allocation framework including credit instruments in a portfolio context. A case study for the US market reveals that mean-variance optimal portfolios always contain a reasonable proportion of credits instruments. Rounding out Part I, is a consideration of the dependence of extreme (tail) events on a portfolio level, i.e., the risk of rare events occurring interdependently. To model this new product group, called cross-asset portfolios, the authors suggest multivariate stochastic processes and hierarchical copulas.

Part II deals with the world of alternative dynamic trading strategies and illustrates different portfolio protection approaches. The first chapter in this part, Chap. 9, depicts various dynamic portfolio insurance strategies (without options) and explains their practical implementation. Portfolio insurance strategies such as constant proportion portfolio insurance (CPPI) or option-based portfolio insurance (OBPI) are designed to achieve a minimum level of wealth without foregoing participation in upward-moving markets. Based on utility, Chap. 10 coherently argues when and why OBPI are better than CPPI strategies and vice versa. With constant proportion debt obligation (CPDO), an additional strategy is introduced in Chap. 11. In a first step, the authors basically test the safety of CPPI and CPDO strategies under a multivariate Lévy setting. Specifically, they calibrate a multivariate variance gamma process on correlated spreads, which can then be used to quantify the gap risk for CPPIs and CPDOs. The following two chapters deal with robust asset allocation. Chapter 12 analyzes how a robustified frontier can be used to improve the performance of CPPI; Chap. 13 uses an empirical study based on European data to illustrate a robust asset-allocation methodology taking into consideration ambiguity concerning the distribution of asset returns. Ignoring dynamic strategies and concentrating on semi-static hedging strategies reveals that the latter often lead to better performance while simultaneously reducing model risk. Furthermore, using barrier options, the authors show how a perfect semistatic hedging strategy for discretely observed option prices can be developed in a general Markov-type model. Chapter 15, the final chapter, deals with discrete-time variance-optimal hedging in affine stochastic volatility models.

The overall scope of *Alternative Investments and Strategies* is so broad that it is challenging to take in from a single reading. However, even though each article has a different author (or authors), and thus inevitably its own style, the chapters are well coordinated and logically combined, which helps the reader keep the big picture in mind and follow the common themes. As is immediately apparent, the book's editors are academics with a strong interest in both theoretical fundamentals and practical applications. In setting out to combine academic research and practical experience in a field as diverse as alternative investments and portfolio strategies and, at the same time, serve as a guide for implementing various state-of-the-art models; Kiesel, Scherer, and Zagst set themselves an ambitious goal—one they accomplished excellently. In most articles, the implementation of developed models is demonstrated by way of practical or empirical examples and case studies. Numerous graphs, diagrams, and tables make the book very accessible, enjoyable to read, and easy to understand.

In conclusion, from my point of view, *Alternative Investments and Strategies* is an excellent and profound introduction to the world of alternative assets and trading

strategies. I recommend this book to academics and to practitioners who have a sound background in quantitative finance. If you are interested not only in asset classes other than those usually treated in standard theory, but also in innovative extensions of the classical mean-variance portfolio approach, this is the book for you.